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Curriculum Landscapes and Trends

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SUBSTANTIVE TRENDS IN CURRICULUM DESIGN AND IMPLEMENTATION: AN ANALYSIS OF INNOVATIONS IN THE NETHERLANDS

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9.1 INTRODUCTION

Many innovations have taken place in the secondary school curriculum in the Netherlands over the past few decades. These innovations have been inspired by the continuing necessity to update both subject matter and teaching methods, as well as by recurring innovations in the education system. As a result, educational goals, subject matter and teaching materials in every subject significantly differ from those used forty years ago.

In this chapter we discuss substantive trends in the curricula for two subject areas in Dutch secondary education. First, innovations in the subjects will be situated against the background of two large-scale, typically Dutch educational reforms, namely, the introduction of basic education (a common curriculum) in lower secondary education, and the introduction of the so-called 'Studyhouse' in upper general secondary education, a reform aimed at stimulating active and self-regulated learning by students. Secondly, certain crucial developments in the subjects will be interpreted in terms of three broader waves in curriculum innovation transcending national borders: an initial stage, in which 'the structure of the discipline' was central, a second stage in which the emphasis was on learning in real-life contexts, and a more recent stage in which constructivist ideas have influenced the way learning processes are being organized. These long waves gradually emerge and replace each other. Thus, there is always an overlap. Moreover, in practice certain elements of the old wave may be preserved and integrated in the new. These long waves appear as international phenomena, but curriculum development is always coloured

by national factors, subject domains, and contexts. We will discuss how impulses for renewal are substantiated in different ways for the various curriculum domains.

The analysis partly draws on two studies, commissioned by the Netherlands Ministry of Education, into developments in mathematics and science education (Vermeulen, Volman & Terwel, 1997) and foreign language teaching (Smeets, 1998). Each study included a review of the available literature concerning innovations for the subjects in question, and in-depth interviews with experts (curriculum specialists, subject specialists, researchers, policy makers and teachers). In addition to these data, more recent empirical studies and analyses are used (Roelofs & Terwel, 1999; van der Werf, Lubbers & Kuyper, 1999), along with findings from evaluation studies by the Netherlands Inspectorate of Education (van den Bergh, Peters-Sips & Zwarts, 1999).

The main questions addressed are the following:

1. Which are recent large-scale curriculum innovations in secondary education in the Netherlands, what is known about their implementation in the classroom, and what are the learning results associated with the innovations?
2. Which are the (international) historical waves in curriculum theory and practice over the past forty years in mathematics and foreign languages?
3. How are the large-scale curriculum innovations related to the (international) historical waves in curriculum theory and practice over the past forty years?

9.2 TWO EDUCATIONAL INNOVATIONS IN THE NETHERLANDS

Common curriculum in lower secondary education

Developments in society, as well as notions of social justice and equality of opportunity in education, were important motives for curriculum innovation in the first stage of secondary education in the Netherlands (junior high / middle school level). It was Leon van Gelder, Professor of Education at Groningen University, who was one of the proponents of a radical innovation. In the 1960s and 1970s he proposed a new curriculum for all 12- to 15-year-olds. His concept of a comprehensive school (middle school) was inspired by similar innovations in Sweden, Great Britain and Germany. Some of the European scholars who inspired this innovation included Habermas, Bernstein and Klafki. In the 1970s, when the social democratic party became a coalition partner in the Dutch government, plans were launched and experiments were initiated to design and implement the middle school. One of the main issues was to overcome the traditional division between general education and

vocational education, and the accompanying system of curriculum tracking between and within schools. These institutional and curricular structures were a relict from the old nineteenth century class society and ideologically related to the theory of *Bildung*¹. Van Gelder and his team strongly condemned this traditional *Bildung* versus *Ausbildung* distinction and proposed a shift from a *Bildungstheoretical*, phenomenological approach to a more practice-oriented and empirical approach. The curricular innovations in the middle school experiments were supported by the Netherlands Institute for Curriculum Development (SLO). However, the main burden of the development of the new curriculum materials was on the teachers. In practice the burden proved too heavy. Elements of the new middle school curriculum were: integration of subjects into broader curriculum domains; connecting teaching and learning to real-life situations in order to make knowledge more relevant; integrating cognitive, affective and psycho-motor dimensions of learning; and students of different abilities working together in heterogeneous classes and small groups. These ideas, motivated by a strong belief in education as a vehicle for social reform, were accompanied by proposals to restructure the selective, elitist secondary school system into a horizontal, integrated, comprehensive system. Doing justice to students from various social-economic backgrounds was a major goal of this educational design.

As soon as a new, conservative Minister of Education was in charge, the experiments gradually lost their political legitimation and support, and were finally abandoned. It took several decades before a new political consensus could be found for a new curriculum. At the start of the school year 1993-1994 a major innovation was introduced in lower secondary education. All students were to be part of a national curriculum (a core curriculum called 'basic education'). The new curriculum contained attainment targets for 15 subjects, to be covered in three years with some differentiation in time for high and low achieving students in the various streams.

In the core curriculum new subjects, aims and classroom procedures were formulated. Some of the elements of the new curriculum were also part of the middle school curriculum, like learning in real-life situations and integrating the cognitive, affective and psychomotor dimensions. More or less new are the accentuation of skills and cognitive strategies and a new role of the teacher in guiding students in the process of re-invention instead of whole class teaching from a transmission perspective. The development of learning strategies is a central goal that is seen as a longitudinal process to be fostered, both in lower and upper secondary education. It is noteworthy that this innovation was a curriculum innovation without any corresponding institutional reform, as intended by the earlier comprehensive (middle) school movement. Recently, Roelofs and Terwel (1999) concluded that the development and the implementation of this innovative curriculum still fall far behind the

expectations of educators and policy makers. Firstly, the formally stated aim of postponing early selection of students has not been reached. As a consequence of the weak compromise (changing the content but maintaining the traditional tracked structure) students are already selected into different school types or tracks at the very beginning, or during their first year in secondary education. Although the same 15 subject areas form the curriculum for every school type, virtually the only common curriculum factor at the present time are merely the names of these subjects. The contents differ greatly between school types, in both scope and difficulty. Secondly, five years after the introduction of the common curriculum there are indications from research that the learning results are lower than before the introduction of the new curriculum (van der Werf, Lubbers & Kuyper, 1999). However, from its evaluation study conducted five years after the introduction of the common curriculum, the Inspectorate of Education concluded that the learning results relative to the stated goals are 'satisfactory'. For two-thirds of the attainment targets the results are at or above the minimum level, although results differ between subjects (van den Bergh, Peters-Sips & Zwarts, 1999). Thirdly, differences (inequalities) in learning results and opportunities between categories of students relating to gender, SES and ethnicity have not changed after five years of curriculum innovation. Lastly, the intended new teaching methods were only observed in a small minority of schools and classrooms. One of the striking results was the discrepancy between students' and teachers' perceptions of the learning environment. Whereas teachers indicated that they regularly or often practiced new innovative teaching methods, the students indicated that teachers did so infrequently. Although school and class climates were evaluated in more positive terms, the rather disappointing overall conclusion must be that, in terms of curriculum levels, the intentions, aims and characteristics of the new curriculum are more 'ideal' than 'experienced', and far from being 'attained' (Roelofs & Terwel, 1999; van den Bergh, Peters-Sips & Zwarts, 1999; van der Werf, Lubbers & Kuyper, 1999).

Studyhouse in upper general secondary education

A second major innovation, which has recently been implemented in upper general secondary education (15-18 year old students), is the Studyhouse. The innovation covers a modernization of the curriculum, a clustering of subjects in four 'Curriculum Profiles', and changes in pedagogics/didactics and organization of teaching and learning (characterized by the metaphor 'Studyhouse'). For a brief overview of main characteristics of this reform we refer to van den Akker's chapter 4 in this Volume.

The introduction of the Studyhouse has been rather difficult and confusing. There has been a lot of criticism by parents, students and teachers, and, consequently, a continuing political debate about the characteristics and especially the demands placed on teachers and

students in the new curriculum, with so many new subjects and new teaching methods. From this debate, the following main points have emerged. Firstly, many teachers had difficulties in finding a balance between student-directed and teacher-directed learning. The concept of active and self-regulated learning raised many questions. Secondly, left wing critics emphasized the innovation seemed intended to increase selection. In their view, the new, extended curriculum will result in social selection. Students from low SES backgrounds do not have the attitudes and skills required for success. These students would need more attention and guidance from their teachers. Thirdly, and paradoxically, the more conservative, right wing critics also mentioned the lack of teacher guidance, although most of these critics would certainly regard the ideal teacher as more of an expert and an authority in his or her subject.

Curriculum as a battlefield

In viewing the overall picture of the two major curriculum innovations in secondary education in the Netherlands, it is no exaggeration to state that the national curriculum has become part of a continuing political struggle. New educational concepts, often derived from cognitive theories, are key elements in the debate. Behind such ostensibly objective concepts as self-regulated and autonomous learning, there is a world of political and ideological contradictions that makes the curriculum a battlefield for all parties involved. Under the banner of curriculum innovation there are progressive and regressive movements at work. The cognitive sciences, social psychology and information and communication technology have inspired policy makers and curriculum developers to prepare students for their future roles in management, industry, science and technology. At the same time, the new curriculum, wrapped up in the traditional 19th century European school structure, has become a highly selective instrument, clearly showing how schools structure inequality (Oakes, 1985; Oakes & Guiton, 1995). Behind all this, the political agenda of the new 'third way' policy makers is dominant and clearly reinforces the traditionally sharp class distinctions, while at the same time making room for an emerging new elite in our present-day society of information and communication technology. Two examples may illustrate the dominant ideology. Firstly, the early selection of students in a highly differentiated (streamed) secondary school system has been accentuated and goes on almost without discussion about the original intention of a common curriculum. Secondly, the last years of general secondary education (Studyhouse) are deliberately designed to diminish the enrolment of students into university, which seems to be especially detrimental for students from low-income families.

Having described the two large-scale innovations in secondary education, we will explore three historical curriculum waves and link them to the two innovations in secondary education. These substantive trends in subjects like mathematics and languages in the Dutch secondary curriculum correspond highly with the historical waves as described in the international curriculum literature. Some examples, especially from mathematics in the Netherlands, are given to explicate our understanding of the recent, large-scale innovations in the Netherlands as expressions of an international, historical wave in curriculum thinking and practice.

9.3. HISTORICAL WAVES IN CURRICULUM INNOVATION

In the international curriculum literature three, partly overlapping, historical waves in curriculum innovations in the past forty years have been described (Darling-Hammond & Snyder, 1992; de Lange, 1987; Huhse, 1968; Kliebard, 1992; van den Akker, 1998; Vermeulen, Volman & Terwel, 1997; Walker, 1990; Wallace & Louden, 1998). In the 1950s and 1960s, for example, mathematics and science education were characterized by an emphasis on the transmission of knowledge and explanations by teachers, with the focus on 'basics' (computations, algebraic equations, calculations, and drills). As a result of a growing awareness of the problems inherent to this traditional approach, certain innovations were launched.

From our perspective the following three waves in curriculum innovation can be discerned.

Structure of the discipline as a source of curriculum innovation

During the first period (1960-1975) innovations were driven by the idea that scientific concepts, principles, relations and structures lie at the heart of innovations in academic subjects. The academic disciplines acted as a lead for these innovations. In the British-American literature this paradigm is referred to by the phrase 'structure of the discipline' (cf. Huhse, 1968; Pinar, Reynolds, Slattery & Taubman, 1995; Walker, 1990).

Curriculum innovation and learning in real-life contexts

At this stage (1970-1985) curriculum innovators were concerned with the relation between students' daily experiences and school subjects, and with issues of individual differences, participation and inclusion of all students, and social justice. This was expressed by slogans such as 'mathematics for all students', 'chemistry for all', or 'science for all' (Freudenthal, 1968; Keitel, 1987; Kuiper, 1993; Wierstra, 1990).

Curriculum innovation from a constructivist perspective

The third wave of innovation (1980 to the present) focuses on learning processes. Under the influence of the constructivist approach in cognitive science growing attention is paid to the constructions and ideas that are provided by pupils, and which may influence concept formation, problem solving and (meta-)cognitive skills. This innovative movement is still being developed further (Gravemeijer, 1994; Gravemeijer & Terwel, 2000; Terwel, 1999; von Glasersfeld, 1991; Wood, Cobb & Yackel, 1995).

The succession of innovation movements may be seen as changes in paradigms, with the provision that existing paradigms are never immediately replaced by new paradigms in the process. Often two or even more paradigms exist side by side for extended periods of time. Transitions between paradigms should therefore be regarded as periods in which one paradigm is gradually replaced by another. We assume not only that these waves are related to internal developments within the curriculum research community, but also that they are embedded in broader developments in society as a whole. From this perspective it seems logical that historical waves in curriculum theories emerge across subjects such as mathematics and language. For example, the idea of self-regulated learning in the Studyhouse is not only fuelled by recent cognitivist and constructivist theories. They also have their origins in social needs.

To substantiate the occurrence of the waves across subjects and continents we refer to Wallace and Louden (1998) who identified the same waves and sequence in the science curriculum literature. Their waves description centres round the kinds of knowledge involved. Our first wave 'The structure of the discipline' corresponds with the 'Discipline knowledge' of Wallace and Louden. Our second wave 'Curriculum innovation and learning in real-life contexts' is equivalent to their description of 'Relevant knowledge'. The third wave we have described as 'Curriculum innovations from a constructivist perspective' fits nicely in the description of 'Imperfect knowledge' by Wallace and Louden (1998).

In the following section we describe the three historical waves in curriculum thinking and practice linked to developments in the mathematics and foreign languages curricula in the Netherlands. Some examples are given to point out the place of the two recent, large-scale innovations in the context of the waves.

9.4 CURRICULUM INNOVATION WAVES IN MATHEMATICS AND FOREIGN LANGUAGE EDUCATION

Mathematics education

Already in the 1960s Dutch mathematics teachers were aware of the failures of traditional mathematics education, with its emphasis on the transmission of knowledge and the process of explanation by the teacher, as well as its accent on 'basics': algebraic equations, calculations and drills (cf. de Miranda, 1966). At that time a new curriculum movement, called 'New Math', swept across western countries. This movement gained recognition in the general curriculum literature as 'the structure of the discipline approach'. In the context of mathematics education movement the 'structure of the discipline approach' never became very popular in the Netherlands. Perhaps as a consequence of Freudenthal's criticisms of the New Math movement and his ideas about 'mathematics as a human activity', most teachers were reluctant to accept the ideas of the New Math movement. This may be the reason why the New Math movement fell on rather barren ground in the Netherlands. The 'structure of the discipline' as a wave in curriculum innovation, by and large, bypassed the Netherlands (although there was, and still is, a textbook entitled New Math ('Moderne Wiskunde').

In the history of the mathematics curriculum, three extended waves can be mentioned, the first of which (the structure of the discipline) did not really materialize, leaving the following two long waves: (a) mathematics in real-life contexts and (b) a constructivist approach in mathematics education.

Mathematics education in real-life contexts

With regard to mathematics education, it is generally true to say that the traditional approach of the 1950s gradually changed into a curriculum wave to be characterized as 'mathematics in real-life contexts', which was popularized in those days under the banner of 'mathematics for all and everyone'. The omission of 'the structure of the discipline' stage in the innovation of the mathematics curriculum is probably due directly to the work of Freudenthal. Freudenthal defended his concepts of 'mathematics as a human activity', 'mathematics in real-life contexts' and 'realistic mathematics education' against advocates of 'the structure of the discipline approach'. He was strongly opposed to the New Math movement, with its introduction of sets, relations and logic. Wagenschein, in Germany, was in a similar position. For Freudenthal, New Math was 'mathematics as a system', separated from its context. He highly valued the process of mathematization, rather than the results of the process. He and his co-workers consequently embraced the idea of mathematics in real-life contexts. Freudenthal wanted firstly to ask: "What is the use of it?". This question was actually a call for relevant knowledge in mathematics education (Freudenthal, 1968; Terwel, 1984, 1990; Terwel, Herfs, Mertens & Perrenet, 1994).

In the context of the discussion regarding educational reform (with particular reference to the secondary school system) Freudenthal's motto was 'mathematics for all'. As early as 1968 he stated 'mathematics is not needed by a few people, but virtually by everybody' (Freudenthal, 1968, p. 5). He proposed a kind of integrated middle school, in which students of different abilities worked together in heterogeneous classes and heterogeneous, small groups. He always connected new methods to new contents in his concept for the new integrated secondary curriculum (Freudenthal, 1976, 1980). His motto 'mathematics for all' was perfectly in tune with the challenge for the comprehensive school at that time. He strongly condemned early streaming in the middle school by referring to the well-known 'Matthew effect' (Freudenthal, 1980). However, by the time Freudenthal was retiring and gradually lost his grip on his institute and on the innovation of the mathematics curriculum in the Netherlands, the tide was turning. The idea of a comprehensive school was abandoned and more traditional ideas re-emerged. Even within the Freudenthal Institute an important change took place. Two leading scholars in the Freudenthal Institute, van der Blij and Treffers (1985), strongly advocated early selection and streaming during the first stage of secondary mathematics education. In their view it was impossible to keep students together in heterogeneous groups. Their advice to the government was very influential and paved the way for the final compromise: innovation of the curriculum content but preservation of the traditional school structure. Another opinion leader at the Freudenthal Institute, Jan de Lange (the present director of the Freudenthal Institute) wrote an article under the evocative title "Mathematics for all is no mathematics at all" (de Lange, 1986). Both publications clearly illustrate significant changes in the political and educational philosophy of the Institute in the 1980s. And in 1987 even Freudenthal had to admit that differences in student social and intellectual composition between primary schools were rapidly growing and that the comprehensive ideal was not a realistic option any more. Given the large differences between schools and students he now qualified a proposal for tracking on two levels a realistic but dangerous idea (Freudenthal, 1987). Nowadays there is substantive empirical evidence from evaluation research how dangerous this compromise (changing the curricular content but preserving the traditional school structure) has become. In 2001 'mathematics for all' is not en vogue any more and new proposals to create more separate trajectories in the tracking system have been implemented. The very idea of a common curriculum for all students in the first stage of secondary schooling is abandoned in favour of a restorative tendency to early selection and separation of students. This restorative tendency is internationally known as a process of 'resegregation' (Orfield & Yun, 1999), which is in fact an expression of the growing impact of market forces on pupil grouping in secondary schooling (Reay, 1998).

Mathematics education from a constructivist perspective

While abandoning Freudenthal's ideas regarding the integrated secondary school, Freudenthal's successors selectively honoured his legacy by keeping alive certain elements of the pedagogical and didactical part of his work. These elements were brought together under the new acronym RME (Realistic Mathematics Education). How influential this movement has been in the Netherlands can be illustrated by looking at the curriculum materials. Nowadays almost all textbooks, teacher guides and lesson plans in secondary mathematics education show the characteristics of RME. However, while suggesting continuity, RME became more and more related to constructivism. Consequently, a new wave in the innovation of the mathematics curriculum emerged in the 80's: mathematics education from a constructivist perspective. How did this change come about? This is in a sense a remarkable development, because Freudenthal himself was strongly opposed to constructivism (and any other form of educational '-ism'), and considered it an empty philosophy and poor developmental psychology (Freudenthal, 1991). The main problem for him was the lack of clarity or the lack of consensus on what constructivism is. He reacts to this lack of clarity by introducing his own terms like re-construction and re-invention.

However, Freudenthal was inspired by traditional European conceptions of education and learning, as advocated by, for example, Decroly, Wagenschein, Langeveld, Selz, Kohnstamm, Vygotsky and Piaget. Phenomenology and reform pedagogy were important sources for Freudenthal's conception of the mathematics curriculum. The same holds true of his concept of 'guided re-invention', which is clearly related to the work of John Dewey. Although he rarely referred to these sources explicitly, Freudenthal may be considered in a sense a constructivist *avant la lettre*. This connection with European and American curriculum traditions is the main reason why it was comparatively easy for Freudenthal's co-workers and, more in general, the Dutch mathematics educators, to relate to recent movements such as the constructivist movement, for example, through the work of Paul Cobb (Wood, Cobb & Yackel, 1995). Koeno Gravemeijer, one of the current leading researchers in the Freudenthal Institute, expressed the relation between realistic mathematics education and constructivism as follows: "The central principle of constructivism is that each person constructs his or her own form of knowledge, and that direct transfer of knowledge is not possible. This idea of the independent construction of knowledge supports the central realistic principle." (Gravemeijer, 1994). Here we see how Gravemeijer tries to reconcile and integrate 'constructivism' with the concept of RME. Recently, there is opposition from within the mathematics community to the basic idea that students construct their own knowledge and proceed from the real world to the mathematical world. The main criticism of the RME approach is that it is often impossible to proceed from real-life situations to 'mathematics'. Re-invention and re-construction, in this

view, are a waste of time (Keune, 1998; Verstappen, 1994). The group around Gravemeijer, however, has gone more and more in the direction of social constructivism, in which a child's theory about the world is actively built by the child by internalizing socially structured ideas in a dialogical relationship with its social context. This way of thinking, for which in mathematics education Cobb and his colleagues (Cobb & Bowers, 1999) may be considered the leaders, implies that students should be made aware of the fact that there are multiple solutions for a given problem, that they are able to think of some solution themselves, and only then be shown why the 'canonical' solution of mathematics might be the best one.

Earlier, we described three - in reality two - long waves in our discussion of the Dutch mathematics curriculum. How do these waves relate to curricula and classroom practices? In terms of Goodlad's (1979) curriculum typology (i.e. ideal, formal, operational, attained; cf. van den Akker, 1993) we draw the following conclusions. Although various innovations have been conceptualized (ideal level) and elaborated in curriculum documents and materials (formal level), little is known about what actually happens in the classroom (operational level). The lack of information about the extent of success at the level of the operational curriculum (van den Akker, 1993) clearly calls for further research. At the level of the ideal curriculum there exists an ideology that has developed historically from Freudenthal's motto 'mathematics for all' towards the recent constructivist conception of RME. Regardless of the many discussions that may be conducted internally, there is broad agreement about the basic ideas, as well as about the direction of the development of mathematics education.

At the level of the formal curriculum, innovation in mathematics education may be said to have been successful. There are new examination programs and curricula for the full range of the streams in secondary education. The RME principles have to some extent been integrated into all published mathematics textbooks. With regard to the operational curriculum, mathematics education is at a transitional stage. Many of those involved have noticed a lack of systematic evaluation and support for the way teachers have translated the innovation into concrete actions. It is still unknown how lessons are being modelled on these new ideas. It therefore remains partly an open question whether Stoller's prediction will come true, when he said about Wagenschein and Freudenthal that they are laughed at because of their idealism and because they don't fit in with any bureaucratic model, and forgotten when it comes to real classroom practices (Stoller, 1978).

Foreign language education²

The history of foreign language education oscillates between two poles as the main aims of education: acquisition of the language system, and acquisition of communicative skills (Smeets, 1998). After disappointing experiments with instructional formats, based on the idea that a foreign language is best learned by imitating good examples, at the beginning of

the 20th century, the grammar-translation method, which had traditionally dominated foreign language education, became influential again in Europe after World War I.

The grammar-translation method can be seen as a manifestation of the first innovation wave. This method is based on classical language teaching approaches, with their emphasis on how to translate and interpret written texts, as well as on the language system itself, that is, on the 'structure of the discipline'. As a result of developments in the US in the 1960s, renewed attention was paid to the communicative skills of language learners. New methods were developed, such as the audio-lingual method and audio-visual methods, which were inspired by a behaviourist approach to learning. They emphasized drills and reinforcement practice - witness the introduction of the language lab - and promoted the idea that grammatical rules should be learned by the inductive bottom-up method rather than the top-down or deductive method, involving explicit teaching. Again, the results of these methods appeared to be disappointing, and foreign language learning by the grammatical method once again became dominant.

At the end of the 1970s the notional-functional approach became influential - notions referring to the concepts that are to be expressed through language, functions referring to the actions that a foreign-language learner should be able to perform. This approach focuses on the use of a foreign language for communicative ends, pushing grammar and syntax into the background and attempts to make connections with the daily lives of students, and to incite them to participate in communication.

These characteristics can be recognized as typical of the second innovative wave. It is therefore not surprising that the notional-functional approach fitted in well with the experimental middle school philosophy that foreign languages are learned in order to be used. In a different innovative project in lower secondary education (at the lowest general level, called MAVO) the communicative approach was also introduced. The innovative ideas were implemented at the formal curriculum level via a variety of teaching materials, in line with the second innovative wave, and often centring round particular themes, as well as via the central pre-vocational MAVO examinations in 1986. The latter, in particular, allowed the communicative approach to gain a firm foothold in these types of education.

However, at the higher levels of general secondary education little changed in the operational curriculum in this period. It was only with the introduction of the common curriculum in 1993 that the first changes were made. In the attainment targets the communicative function of language use was emphasized, and the communicative skills, the activity of the student, and authentic language situations became central. Productive language skills, especially speaking skills, received a great deal of attention, and receptive skills became attuned to the demands of daily life (Withagen, Oud-de Glas, Smeets & Buis,

1996). Apart from these substantive changes, changes in teaching methods and forms of assessment were also promoted.

Finally, at the end of the 1990s changes in the upper levels of general secondary education became visible. The communicative approach was introduced into the new central examinations programs, and the changes that came with the Studyhouse presented a further impetus for change in the direction of communication-oriented foreign language learning.

Recent developments have been directed towards learning to learn, active learning and meta-cognitive skills, thus bringing the third wave of innovation into view. For foreign language education the Studyhouse principles have been translated into the idea that students should be able to function in language situations they did not practice at school, that they should be able to communicate about issues they never studied, and, even, that they might have to learn new languages on their own. The task is not only to learn a language, but to learn how to learn a language. Active and self-directed learning in foreign language education may imply independent collection of information for speech exercises, or of reading texts via the Internet, and setting one's own learning goals. In addition, increasing attention is being paid to language use strategies (e.g., the compensatory strategy of circumscribing unfamiliar words) and language learning strategies (e.g. inferring word meanings from the context) resulting in a shift from more emphasis on written language to more emphasis on oral language.

In summary, the most notable change in foreign language teaching during the past thirty years has been the shift from a focus on language as a system to language primarily being looked upon as a means of communication. This comes down to a gradual shift from grammatical language learning to communicative language learning, from a first wave way of thinking to the second wave innovation. In the schools, though, a mixture of approaches is often used; eclectic methods combining characteristics of different approaches (van Els et al., 1977). However, for foreign language education the same holds true as for mathematics and science, namely, that the third innovative wave mainly appears at the level of the ideal curriculum (Smeets, 1998).

We have described three long waves in thinking about foreign language education in the Netherlands. How does this relate to curricula and classroom practices? In answering this question we should point out that, with regard to the Netherlands, there are important differences between the various languages concerning the nature and the pace of the innovation process. In terms of implementation, the innovations in English, German and French more or less follow similar lines. In educational practice, however, differences occur, in particular between English on the one hand, and French and German on the other. In English the communicative approach can be integrated more easily into teaching than is

the case for the other subjects, since pupils are already quite familiar with English when they enter secondary education. This makes the use of authentic texts easier than in German and French, where a basic vocabulary has to be established first. On the other hand the necessity of change is more urgent for French and German teachers, who have to make their subject more attractive for pupils, since it is not compulsory in the second stage of secondary education for pupils, whereas English teachers can relax, knowing that their subject is compulsory throughout secondary education (Smeets, 1998).

However, it is important to keep in mind that practically speaking the polarity between the various methods, e.g. grammatical versus communicative, is less pronounced than the theoretical distinctions in the curriculum literature suggest. Without basic grammar, communication will stay on the level 'Me Tarzan, you Jane'. Thus, in educational practice there will always be a combination of approaches. In principle there is no single theory that can provide an adequate foundation for the curriculum. To provide educational practice with a solid underpinning of ideas, educators need unite elements from multiple theories along with heuristics drawn from experience into a coherent basis for action. The challenge will be how to avoid a fragmented curriculum and yet to find a well tuned balance between a grammatical and a communicative approach.

9.5 CONCLUSIONS AND DISCUSSION

In this chapter the following main questions have been addressed:

1. Which are the recent large-scale curriculum innovations in secondary education in the Netherlands, what is known about their implementation in the classroom, and what are the learning results associated with the innovations?
2. Which are the (international) historical waves in curriculum theory and practice over the past forty years in mathematics and foreign languages?
3. How are the large-scale curriculum innovations related to the (international) historical waves in curriculum theory and practice over the past forty years?

Two major innovations have been described. The one takes place in lower secondary education (basic education, common curriculum), the other in upper general secondary education (a.o. Studyhouse). Schools differ significantly in the degree of implementation and in learning results. Many aspects of the innovations are subject to intense political and educational debate. The first outcomes of the experimental studies and evaluations with regard to the new curriculum for 12- to 15-year-olds are rather disappointing, especially in relation to the implementation of active learning as well as to the learning results and the

extent to which schools have succeeded in reducing inequalities related to SES and ethnic backgrounds. In contrast, school and class climates have been evaluated in more positive terms.

In our survey of curriculum innovations in the Netherlands spanning about forty years, we can recognize three main waves that correspond with international movements: the structure of the discipline as a source of curriculum innovation (discipline knowledge), curriculum innovation and learning in real-life contexts (relevant knowledge), and curriculum innovations from a constructivist perspective (imperfect knowledge). Taking into consideration differences inherent to specific subjects, including mathematics and foreign languages, the above-mentioned waves can generally be found across subjects and clearly correspond with their international pendants (Wallace & Loudon, 1998). In addition, a fourth wave in curriculum innovation seems to be emerging: a growing awareness of the strategic aspects of learning, both in mathematics education and in foreign language teaching.

The swing of the pendulum, from the structure of the discipline to the daily lives of students, seems to have found a new space, oscillating between self-regulated learning as conceived by cognitivist and constructivist theories, and guided strategic learning. The latter goes back to a long research tradition in the Netherlands, which has its roots in classical European learning theories by Piaget, Vygotsky, Selz, Kohnstamm, van Parreren, and Freudenthal. Today this tradition is being cross-fertilized by theories from the English-speaking world and by different approaches to instructional-design (Mayer, 1989, 1996, 1999; Perkins & Unger, 1999; Reigeluth, 1999). In the European tradition, however, the problems of constructing mental representations, designing models and acquiring skills and strategies for learning and problem solving continue to be seen in the context of the curriculum, and remain focused on insight and understanding, rather than on mastery of skills as an end in itself (van Dijk, van Oers & Terwel, 2003). It is precisely this focus on understanding in recent British and American theories that makes them compatible with European research traditions. Curriculum development and innovation can profit from a synthesis of insights provided by a variety of backgrounds; as exemplified by the recent convergence of trends from the continental European, British and American traditions in learning theories and instructional design. To put it more strongly, in curriculum matters making valid deductions on the basis of one single theory is just not feasible. We need, what Schwab has called, a 'polyfocal conspectus'; a focus which unites elements from multiple theories with heuristics drawn from experience and guidelines from good practices, so that a firm foundation for curriculum innovation may be established. In arresting the swing or better in order to find a balance we first need to realize that in the sequence of waves, there is a tendency to advocating the new and rejecting the old wave, while eliminating a middle

ground and driving out new ideas. As Stahl (1999) argues in analyzing the 'whole language movement', we need some sort of eclecticism, incorporating various approaches in one program. Here we are at the very heart of a fundamental problem in curriculum development. Our point of view lead us to believe that although curricular deductions on the basis of one single theory is not feasible, there always will be some sort of eclecticism, and in order to find a sound basis for making curricular decisions, a unifying principle is needed. We think that great educational scholars from the past and the present like Piaget, Vygotsky, Dewey and Bruner can guide us to find such a unifying principle and to preserve a delicate balance in the sometimes turbulent sequence of curricular movements and waves.

The rise and decline of the waves seems closely related to developments in society and less to the outcomes of empirical research (Stahl, 1999). Insights from educational philosophies and empirical studies are used and misused depending on the political climate. Institutes for curriculum development, such as the SLO and the Freudenthal Institute in the Netherlands are highly dependent on subsidies from the Dutch Ministry of Education, and are more or less the civil servants for official policies. How fast the pendulum can swing is illustrated by the movement towards, and away from, comprehensive education for 12- to 15-year olds. The well-known Dutch strategy of consensus (the so-called 'polder model') has many advantages, but it sometimes runs into contradictions and frictions when it comes to practical implementation. As a relic from the comprehensive movement in the 1970s a common curriculum was introduced in the 1990s. However, no consensus could be reached concerning institutional integration. The resulting compromise (new curriculum contents within the traditional school structure) pays lip service to a common curriculum, while in practice sharp distinctions remain between schools and curricula. A sharp dichotomy between general and vocational tracks remains, and even within these two main tracks, various sub-tracks can be recognized. Furthermore, in the lower tracks students from low SES backgrounds and ethnic minorities are over-represented (so called 'black schools'). Leading scholars and early warners such as Van Gelder and Freudenthal predicted the outcomes of such a vulnerable, political compromise. Their engagement with disadvantaged students fell on fruitful soil in the seventies and early eighties, but was forgotten as soon as the political tide turned. The growing impact of market forces on pupil grouping has resulted in a process of resegregation in education (Oakes, 1985; Oakes & Guiton, 1995; Orfield & Yun, 1999; Reay, 1998). One of the main themes in the national political and educational debate concerns the integration of children from ethnic minorities, and refugees. However, paradoxically, the abandonment of the separation of students from various achievement levels and socio-ethnic backgrounds constitutes a taboo in the actual discussion. In the prevailing socio-political climate there is no place for the notion of comprehensive schooling, while at the same time there is deep concern about the lack of social cohesion.

The general fear of social disintegration appears to be inversely proportional to the willingness of the majority of well-meaning citizens to support educational innovations that are directed towards integration and comprehensiveness. Given this paradox, it would seem to be worthwhile, when attempting to contribute to curriculum innovations, not only to analyze the nature of 'long waves' in curriculum theory and practice, but also to take account of the political movements that form the background to these waves.

NOTES

- ¹ *Bildung* is the German neo-humanist theory of education comparable to liberal education (cf. Klafki, 2000). In this theory, *Ausbildung* (vocational education) has to be postponed until a sufficient level of *Bildung* has been reached. However, in practice proponents of the idea of *Bildung* are often defenders of early selection and tracking e.g. in Germany were students are already selected for the elitist *Gymnasium* at the age of 10 years
- ² In this section use is gratefully made of the study of Smeets (1998) into innovations in foreign language education in the Netherlands.

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